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1 **PRESILICON DISK MODEL FOR DESIGN, DEVELOPMENT AND VALIDATION**  
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4 **ABSTRACT OF THE DISCLOSURE**  
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6 A method for verifying the design of a disk controller circuit to be incorporated into a  
7 targeted hard disk drive system, the targeted hard disk drive system including a read/write  
8 channel and a head actuator. The method may include steps of emulating reading and writing of  
9 data in the read/write channel based upon a model of the read/write channel, emulating a  
10 behavior of the head actuator during track seek and track following operations based upon an  
11 electromechanical model of the head actuator, providing a disk controller design base for  
12 defining integrated circuit elements comprising the disk controller circuit and providing a  
13 controller environment to support execution and debug of firmware for operating the disk  
14 controller circuit. A plurality of disk functions may then be carried out according to a script  
15 running on a host. The plurality of disk functions includes interaction of at least the read/write  
16 model, the electromechanical model, the disk controller design base and the controller  
17 environment.